

PATENT COOPERATION TREATY

Rec'd EPO 09 MAY 2005

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2004/003561

International filing date (day/month/year)
18.08.2004

Priority date (day/month/year)
18.08.2003

International Patent Classification (IPC) or both national classification and IPC
G06F17/30

Applicant
ORCHESTRIA LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1,28,29,52,54,77-80
Inventive step (IS)	Yes: Claims	
	No: Claims	2-27,30-51,53,55-76
Industrial applicability (IA)	Yes: Claims	1-80
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V.

- 1 The following documents are referred to in this communication:
 - D1 : WO 02/101535 A (STORAGE TECHNOLOGY CORP) 19 December 2002 (2002-12-19)
 - D2: US-A-4 310 883 (CLIFTON ROBERT D ET AL) 12 January 1982 (1982-01-12)
 - D3: HARDING W B: "OBJECT STORAGE HIERARCHY MANAGEMENT" IBM SYSTEMS JOURNAL, IBM CORP. ARMONK, NEW YORK, US, vol. 29, no. 3, January 1990 (1990-01), pages 384-397, XP000265371 ISSN: 0018-8670
 - D4 COLLINS W ET AL: "Los Alamos HPDS: high-speed data transfer" MASS STORAGE SYSTEMS, 1993. PUTTING ALL THAT DATA TO WORK. PROCEEDINGS., TWELFTH IEEE SYMPOSIUM ON MONTEREY, CA, USA 26-29 APRIL 1993, LOS ALAMITOS, CA, USA, IEEE COMPUT. SOC, US, 26 April 1993 (1993-04-26), pages 111-118, XP010095398 ISBN: 0-8186-3460-X

2 INDEPENDENT CLAIM 1

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parentheses applying to this document):

- i) *'A method of operating a data processing system, the system comprising one or more application programs requiring persistent data storage for data files of application data, a plurality of storage devices each accessible via a computer network to one or more computers executing said application programs, and a broker program, wherein the method comprises'* (see e.g. fig. 1; abstract; p. 4, l. 21 to p. 5, l. 8; p. 9, l. 3 - 9); the application programs run on the MVS- and Non-MVS Hosts. The storage devices, e.g. the Disk Subsystems (ref. 22), are connected with the hosts via communication lines (ref. 19, 21, 23, 25) which relate to the 'computer network'. The 'Outboard SM Components' relate to the broker program.
- ii) *'receiving, by means of said broker program, a request for storage of a data*

file of application data, and' (see e.g. fig. 1; abstract; p. 1, l. 11 - 19; p. 6, l. 13 - 24; p. 11, l. 21 to 25; p. 12, l. 1 to 26);

- iii) *'selecting for said data file which of said storage devices will be used to store said data file in accordance with the characteristics of the application data to be stored and the state of said storage devices,'* (see e.g. p. 11, l. 3 to 26; p. 14, l. 22 to p. 16, l. 24; p. 19, l. 19 p. 20, l. 21); the management software (ref. 42) uses data attributes and state information of the storage devices (e.g. a tape cartridge which is completely void of data sets) to decide where to store the data sets.
- iv) *'wherein said characteristics of the data to be stored include an expiry date, beyond which the application data is no longer required and may be deleted.'* (see e.g. p. 20, l. 4 to 21); see especially l. 5 to 7 and 13 to 16. It is disclosed that the expiration date of data is used to select the same storage element for data sets having the same expiration date.

2.2 Alternatively, document D2 discloses also all the features defined in claim in combination (see e.g. fig. 3, abstract, col. 1, l. 10 to col. 6, 35; col. 9, l. 56 to 64; col. 11, l. 19 to 33; col. 13, l. 57 to col. 14, l. 26; col. 17, l. 3 to 30).

3 INDEPENDENT CLAIMS 28, 29, 52, 54, 77, 78, 79 and 80

- 3.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 28, 29, 52, 54, 77, 78, 79 and 80 is not new in the sense of Article 33(2) PCT.

The same argumentation as for claim 1 is valid, *mutatis mutandis*, for independent claims 28, 29, 52, 54, 77, 78, 79 and 80.

4 DEPENDENT CLAIMS 2-27, 30-51, 53, 55-76

Dependent claims 2-27, 30-51, 53, 55-76 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

4.1 DEPENDENT CLAIMS 2-27

- a) monitoring storage devices (claims 2-5, 24-27): see e.g. D1, p. 19, l. 5 to p. 20, l. 21
- b) selection and management of the data (e.g. deletion) based on expiry dates of the data and the storage devices (claims 6-12): see e.g. D1, p. 19, l. 5 to p. 20, l. 21
- c) content and application-based storage selection (claims 13-16): D1, p. 10, l. 22 to p. 11, l. 26; p. 14, l. 22 to p. 16, l. 24.
- d) direct communication with the storage devices (claims 17-19): see e.g. D4 which discloses direct communication between hosts systems and storage devices and separate metadata servers.
- e) data access via the broker (20-23): see e.g. D1, abstract

All of the features contained in the dependent claims are already disclosed in D1, D2 (see e.g. fig. 3, abstract, col. 1, l. 10 to col. 6, 35; col. 9, l. 56 to 64; col. 11, l. 19 to 33; col. 13, l. 57 to col. 14, l. 26; col. 17, l. 3 to 30), D3 or D4.

- 4.2** The same argumentation as for dependent claims 2-27 is valid, *mutatis mutandis*, for dependent claims 30-51, 53, 55-76.